DYMNYY, Mikhail Gennadiyevich; VOYEVODIN, Ye.V., red.; ONOSHKO, N.G.,
tekhn.red.

[Communist from Izhorski] Kommunist s Izhorskogo. Leningrad,
Lenizdat, 1959. 36 p. (MIRA 13:6)
(Labor and laboring classes)

VOYEVODIN, N.F., doktor tekhn.nauk

Calculating the stability of hopper-dredgers. Sudostroenie 25 no.1:8-12 N '59. (MIRA 13:4)
(Dredging) (Stability of ships)

VOYEVODIN, Yu.M., kandidat tekhnicheskikh nauk.

Coasting method for determining moments of inertia in starting
machines. Vest.mash. 35 no.9:8 S '55. (MLRA 9:1)
(Moments of inertia)

ARKHANGEL'SKIY, L.K.; VOYEVODINA, A.A.; MATEROVA, Ye.A.

Interaction of ion exchange resins with water. Vest LGU 16 no.22: 102-110 '61. (MIRA 14:11)

(Ion exchange resins) (Water vapor)

ROGATINA, Nina Prokof'yevna; POPOVA, Zinaida Fedorovna; ARTMANIS, Stella
Andreyevna; MEL'NIKOVA, Nina Ivanovna; AVDEYEVA Yekaterina Semenovna;
KUZNETSOVA, Irina Pavlovna; ZHEREBINA, Anna Semenovna; VOYEVODINA,
Aleksandra Dmitriyevna; KOLPAKOVA, Ninel' Yevgrafovna; KHAYEVA,
Aleksandra Afanas'yevna; DUNDUKOVA, Valentina Petrovna; LAUSTEN, A.G.,
nauch. red.; GABOVA, D.M., red.; VINOGRADOVA, G.A., tekhn. red.

Zhenskoe i detskoe legkoe plat'e.
[Women's and children's light dress]
Moskva, Gostekhizdat, 1962. 493 p. (MIRA 15:7)
(Dressmaking)

KRUTIKOV, K.T., inzh.; GARINOV, K.A., kand. tekhn. nauk; ITTENBERG, I.A., kand. tekhn. nauk; prinimali uchastiye: VAKHTUROV, A.N., starshiy nauchnyy sotrudnik; VOLKOV, M.V., starshiy nauchnyy sotrudnik; KURTSMAN, L.B., starshiy nauchnyy sotrudnik; BOGATYREVA, M.I., mladshiy nauchnyy sotrudnik; ZABOLOTNEVA, G.K., mladshiy nauchnyy sotrudnik; NOVIKOVA, V.V., mladshiy nauchnyy sotrudnik; ALEKSEYEVA, T.I., mladshiy nauchnyy sotrudnik; PETROVA, I.A., mladshiy nauchnyy sotrudnik; SEDEL'NIKOVA, A.F., mladshiy nauchnyy sotrudnik; KATKOVA, T.I., inzh.; ZELENKOV, P.A., inzh.; SIDOROVA, L.N., starshiy laborant; KALASHNIKOVA, V.M., starshiy laborant; VOYEVODINA, A.Ye., starshiy tekhnik; USPENSKAYA, M.B., starshiy tekhnik; YEPIFANOV, V.K., starshiy tekhnik

[Organization of the shipping of transit cargoes on the Volga-Baltic Sea Waterway.] Organizatsiia perevozok tranzitnykh gruzov po Volgo-Baltiiskomu vodnomu puti. Moskva, Transport, 1965. 109 p. (Moscow. TSentral'nyi nauchno-issledovatel'skii institut ekonomiki i ekspluatatsii vodnogo transporta. Trudy, no.40).

VOYEVODINA, K,

VOYEVODINA, K.

Membrane filters. Zhil.-kom.khoz. 7 no.9:8 '57. (MIRA 10:10)
(Filters and filtration)

VOYEVODINA, K.

[redacted]

Alkalizing water in the Taganrog water supply system. Zhil.-kom. khoz. 7 no.1:23 '57. (MLRA 10:4)

1. Zaveduyushchaya ochistnymi sooruzheniyami Taganrogskogo vodoprovoda.
(Taganrog--Water--Purification)

VOYEVODINA, M.G.

Arrest of early postpartum hemorrhages by ligations on the cervical wall of the uterus. Kaz. med. zhur. no.5:65-66 S-O '61. (MIRA 15:3)

1. Chistopol'skiy rodil'nyy dom.
(HEMORRHAGE, UTERINE)
(UTERUS--SURGERY)

BESPYATOV, M.P., kandtekhn.nauk; KITS, O.V., inzh.; VOYEVODINA, M.V.,
inzh.; OVCHARENKO, V.Ye., inzh.

Analysis of a soap mix after carbonate saponification.
Masl.-zhir. prom. 27 no. 2:17-19 '61. (MIRA 14:2)

1. Khar'kovskiy politekhnicheskiy institut imeni V.I. Lenina
(for Bespyatov, Kits, Voyevodina). 2. Ukrainskiy nauchno-issledovatel'skiy institut maslozhirovoy promyshlennosti
(for Ovcharenko).
(Soap)

BESPYATOV, M.P., kand.tekhn.nauk; VOYEVODINA, M.V., inzh.

Effect of sodium bicarbonate on the pH of aqueous soap solutions.
Masl.-zhir.prom. 27 no.1:18-21 Ja '61. (MIRA 14:1)

1. Khar'kovskiy politekhnicheskiy institut imeni V.I.Lenina.
(Soap) (Sodium carbonate)
(Hydrogen-ion concentration)

BESPYATOV, M.P., kand.tekhn.nauk; VOYEVODINA, M.V., inzh.; RITS, O.V.

"Alcohol error" in the determination of sodium carbonate in cleaning compounds. Masl.-zhir.prom. 26 no.6:25-26 Je '60. (MIRA 13:6)

1. Khar'kovskiy politekhnicheskiy institut imeni V.I.Lenina.
(Cleaning compounds) (Sodium carbonate)

BOGOYAVLENSKIY, A.F.; VOYEVODINA, N.M.

Deposition of CoO_2^{2-} anions on a cobalt anode during its own polarization in alkaline solutions. Zhur. fiz. khim. 39 no. 1: 202-203 Ja '65 (MIRA 19:1)

1. Kazanskiy aviatsionnyy institut. Submitted January 15, 1964.

VOYEVODINA, N.P., inzhener.

Pulse apparatus for testing fatigue strength in fibers. Tekst.prom.
16 no.6:51-52 Je '56. (MLRA 9:8)
(Textile fibers--Texting)(Textile industry--Equipment and supplies)

VOYEVODINA, N.P., kand.tekhn.nauk

Effect of fatigue of cotton fibers on their characteristics. Tekst. prom. 18 no.5:59-61 My '58. (MIRA 11:5)
(Cotton--Testing)

USENKO, V.A., prepodavatel', doktor tekhn. nauk; ABRAMOVA, N.A., prepodavatel', kand. tekhn. nauk; VOYEVODINA, N.P., prepodavatel', kand. tekhn. nauk

Forming of twisted yarn on the DK-30-ShL double twister.
Tekst. prom. 24 no.11:11-15 N '64. (MIRA 17:12)

1. Moskovskiy tekstil'nyy institut.

USENKO, V.A., prof.; VOYEVODINA, N.P., kand. tekhn. nauk; LALYKINA, K.M., inzh.

Classification of yarns with a modified structure (bulked yarns).
Tekst. prom. 23 no.7:72-75 Jl '63. (MIRA 16:8)

1. Sotrudniki Moskovskogo tekstil'nogo instituta.

VOYEVODINA, O.N.

Effect of amizil on the course of secretory and situational conditioned response in dogs exposed to the effect of roentgen rays. Farm. i toks. 26 no.4:410-414 Jl-Ag'63 (MIRA 17:4)

1. Fiziologicheskiy otdel imeni akademika Pavlova (zav. - prof. P.S. Kupalov) Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.

VOYEVODINA, O.N.

[redacted] salivary collection for chemical analysis in conditioned reflexes. Fiziol. zh. SSSR 39 no.3:373-374 May-June 1953. (CIML 25:1)

1. Physiology Department imeni Academician I. P. Pavlov of the Institute of Experimental Medicine of the Academy of Medical Sciences USSR.

VOYEVODINA, O.N.

VOYEVODINA, O.N.

EXCERPTA MEDICA Sec.2 Vol.9/7 Physiology July 56

3099. VOEVODINA O.N. Inst. of exp. Med AMN, SSSR, Leningrad **Effect of the conditioned stimulus on the change of amount and viscosity of unconditioned salivary secretion on feeding** FIZIOL. Z. 1955, 41/5 (684-688) Graphs 2 Tables 1 (Russian text)

In the first 2 days of application of a conditioned stimulus, before the conditioned reflex is established, the volume and viscosity of salivary secretion on feeding decreases, which is probably due to an inhibitory effect of the orientation reaction. Later, during the formation of the conditioned reflex, both volume and viscosity of the salivary excretion increase. The increase of volume is more pronounced in the first period (development) and that of viscosity is more pronounced in the second period (stabilization) of the formation of conditioned reflexes. The increase of viscosity depends on the strength of the conditioned stimulus.

Simonson - Minneapolis, Minn.

VOYEVODINA, O.N.

Change in the quality and viscosity of saliva in response to conditioned and unconditioned stimuli during the short-term use of a conditioned stimulus. Zhur.vys.nerv.deiat. 9 no.5:701-705 S-O '59. (MIRA 13:3)

1. Fiziologicheskiy otdel imeni I.P. Pavlova Instituta eksperimental'noy meditsiny AMN SSSR.
(REFLEX CONDITIONED)
(SALIVA chemistry)

VOYEVODINA, O.N.

Reproduction of some symptoms of radiation sickness in dogs exposed earlier to the effect of X-rays as shown by indexes of change in the complex conditioned reflex motor activity. Zhur. vys. nerv. deiat. 11 no.4:674-679 Jl-Ag '61. (MIRA 15:2)

1. Pavlov Physiological Department, Institute of Experimental Medicine, U.S.S.R. Academy of Medical Sciences, Leningrad. (CONDITIONED RESPONSE) (RADIATION—PHYSIOLOGICAL EFFECT)

VOYEVODINA, O.N.

Effect of aminazine on complex conditioned reflex activities in dogs. Farm.i toks. 24 no.2:131-136 Mr-Ap '61. (MIRA 14:6)

1. Fiziologicheskiy otdel imeni akademika I.P.Pavlova (zav. - prof. P.S.Kupalov) Instituta eksperimental'noy meditsiny AMN SSSR.
(CHLORPROMAZINE) (CONDITIONED RESPONSE)

VOYEVODINA, O.N.

Changes in the quantity and viscosity of saliva in an unconditioned food reflexes. Fiziol.zhur. 47 no.5:655-668 My '61. (MIRA 14:5)

1. From I.P.Pavlov's Department of Physiology, Institute of Experimental Medicine, Leningrad.
(REFLEXES) (SALIVA)

KUPALOV, Petr Stepanovich [deceased]; VOYEVODINA, Ol'ga Nikolayevna; VOLKOVA, Valentina Dmitriyevna; MALYUKOVA, Irina Vasil'yevna; SELIVANOVA. Al'bina Timofeyevna; SYRENSKIY, Valeriy Ivanovich; KHANANASHVILI, Mikhail Mikhaylovich; SHICHKO, Gennadiy Andreyevich; BERKENBLIT, Z.M., red.

[Situational conditioned reflexes in normal dogs and in pathology] Situatsionnye uslovnye refleksy u sobak v norme i patologii. Leningrad, Meditsina, 1964. 274 p. (MIRA 17:8)

VOYEVODINA, O.N.

Effect of bromine on secretory and situational conditioned reflexes in normal dogs and dogs exposed to X rays. Farm. i toks. 26 no.2:145-149 Mr-Ap '63. (MIRA 17:8)

1. Fiziologicheskiy otdel imeni I.P. Pavlova (zav. - prof. P.S. Kupalov) Instituta eksperimental'noy meditsiny AMN SSSR.

VOYEVODINA, O.N.

Effect of outside stimuli on the course of complex motor conditioned reflexes. Zhur. vys. nerv. deiat. 12 no.2: 257-259 Mr-Ap '62. (MIRA 17:12)

1. Fiziologicheskiy otdel imeni I.P. Pavlova Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.

VOYEVODINA, Valentina Dmitriyevna; DUBININA, Revekka Borisovna;
VARSHAVSKAYA, L., red.; YANCHUK, A., red.; YAKOVLEVA, Ye.,
tekhn.red.

[Dress in good taste] Odevaites' so vkusom. Moskva, Mosk.
rabochii, 1961. 187 p. (MIRA 14:2)
(Dressmaking)

VOYEVODKIN, I.B.

SOKOLOV, V.N., kandidat tekhnicheskikh nauk; KUROYEDOV, V.A., kandidat tekhnicheskikh nauk; SOROKIN, A.I., kandidat tekhnicheskikh nauk; LEBEDEV, A.V., inzhener; ZOBNIN, B.F., inzhener; VOYEVODKIN, I.B., inzhener.

Investigation of the heating of large ingots. [Trudy] TSNIITMASH 66:83-115 '54. (MIRA 7:9)

1. TSNIITMASh (for Kuroyedov). 2. Uralmashzavod (for Voyevodkin). (Steel ingots) (Metals--Heat treatment)

AGRANOVSKAYA, I.A.; ALYUSHINSKIY, Yu.A.; ASATKINA, Ye.F.; BOYTSOVA, Ye.P.; BOCHARNIKOVA, A.D.; VOYEVODOVA, Ye.; GROMOVA, N.S.; ZAUYER, V.V.; MARTYNOVA, Z.I.; PANOVA, L.A.; POKROVSKAYA, I.M.; ROMANOVSKAYA, G.M.; SEDOVA, M.A.; STEL'MAK, N.K.; KHAYKINA, S.L.; EDEL'SHTEYN, L.I. [deceased]; MAKRUSHIN, V.A.; tekhn.red.

[Atlas of upper Cretaceous, Paleocene and Eocene spore and pollen complexes in certain regions of the U.S.S.R.] Atlas verkhnemelovykh, paleotsenovykh i eotsenobykh sporovo-pyl'tsevykh kompleksov nekotorykh raionov SSSR. Leningrad. 1960, 574 p. (Leningrad. Vsesoiuznyi geologicheskii institut. Trudy, vol.30). (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut Ministerstva geologii i okhrany nedr SSSR (for Alyushinskiy, Asatkina, Boytsova, Gromova, Panova, Pokrovskaya, Romanovskaya, Sedova, Stel'mak, Edl'shteyn). 2. Ural'skoye geologicheskoye upravleniye Ministerstva geologii i okhrany nedr SSSR (for Agranovskaya, Bocharnikova, Martynova). 3. Severo-Vostochnoye geologicheskoye upravleniye Ministerstva geologii i okhrany nedr SSSR (for Voyevodova, Khaykina). 4. Leningradskiy filial Gidroproyekta Ministerstva elektrostantsiy (for Zauyer).
(Palynology)

BOYTSOVA,,Ye.P.; VOYEVODOVA, Ye.M.; ZAUYER, V.V.; KOL'TSOVA, T.T.; KRUCHININA, N.V.; MARTYNOVA, Z.I.; PANOVA, L.A.; POKROVSKAYA, I.M.; ROMANOVSKAYA, G.M.; SEDOVA, M.A.; STEL'MAK, N.K.; TABACHNIKOVA, I.P.

[Atlas of lower Cretaceous spore and pollen complexes of some regions of the U.S.S.R.] Atlas nizhnemelovykh sporovo-pyl'tsevykh kompleksov nekotorykh raionov SSSR. Moskva, Nedra, 1964. 551 p. (Leningrad, Vsesoiuznyi geologicheskii institut. Trudy, vol.124) (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut (for Boytsova, Kol'tsova, Kruchinina, Panova, Pokrovskaya, Romanovskaya, Sedova, Stel'mak, Tabachnikova). 2. Ural'skoye geologicheskoye upravleniye (for Martynova). 3. Severo-Vostochnoye geologicheskoye upravleniye (for Voyevodova). 4. Leningradskiy filial Vsesoyuznogo ordena Lenina proyektno-izyskatel'skogo i nauchno-issledovatel'skogo instituta im. Z.Ya. Zhuka (for Zauyer).

VOYEVODOVA, YE. M.

ANIKEYEV, N.P., glavnyy red.; BISKE, S.F., red.; BOBYLEVSKIY, V.I., red.: VAS'KOVSKIY, A.P., red.; VERESHCHAGIN, V.N., red.; DRABKIN, I.Ye., red.; YEVANGULOV, B.B., red.; YEFIMOVA, A.F., red.; ZIMKIN, A.V., red.; LARIN, N.I., red.; LIKHAREV, B.K., red.; MENNER, V.V., red.; MIKHAYLOV, A.F., red.; NIKOLAYEV, A.A., red.; POPOV, G.G., red.; POPOV, Yu.N., red.; SAKS, V.N., red.; SEMEYKIN, A.I., red.; SIMAKOV, A.S., red.; TITOV, V.A., red.; SHILO, N.A., red.; EL'YANOV, M.D., red.; YAKUSHEV, I.R., red.; V redaktirovanii prinimali uchastiye: ANDREYEVA, O.N., red.; BAYKOVSKAYA, T.N., red.; BOLKHOVITINA, N.A., red.; BORSUK, M.O., red.; VASIL'YEV, I.V., red.; VASILEVSKAYA, N.D., red.; VOYEVODOVA, Ye.M., red.; YEVSEYEV, K.P., red.; KIPARISOVA, L.D., red.; KRASNYY, L.I., red.; KRISHTOFOVICH, L.V., red.; KULIKOV, M.V., red.; LIBROVICH, L.S., red.; MARKOV, F.G., red.; MODZALEVSKAYA, Ye.A., red.; NIKIFOROVA, O.I., red.; OBUT, A.M., red.; PCHELINTSEVA, G.T., red.; RZHONSNITSKAYA, M.A., red.; SEDOVA, M.A., red.; STEPANOV, D.L., red.; TIMOFEYEV, B.V., red.; KHUDOLEY, K.M., red.; CHEMEKOV, Yu.F., red.; CHERNYSHEVA, N.Ye., red.. DERZHAVINA, N.G., red.izd-va; GUROVA, O.A., tekhn.red.

(Continued on next card)

ANIKEYEV, N.P.---(continued) Card 2.

[Decisions of the Interdepartmental Conference on the Unified Stratigraphic Columns of the Northeastern Part of the U.S.S.R.] Resheniia Mezhvedomstvennogo soveshchaniia po razrabotke unifitsirovannykh stratigraficheskikh skhem dlia Severo-Vostoka SSSR. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1959. 65 p. (MIRA 13:2)

1. Mezhvedomstvennoye soveshchaniye po razrabotke unifitsirovannykh stratigraficheskikh skhem dlya Severo-Vostoka SSSR, Magadan, 1957. (Soviet Far East--Geology, Stratigraphic)

BARTENEV, G.M.; VOYEVODSKAYA, M.V.

Effect of fillers on the mechanical properties of rubber in the solid state. Kauch. i rez. 23 no.12:14-17 D '64. (MIRA 18:2)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

VOYEVODSKAYA, M.V.; BARTENEV, G.M.

Effect of fillers on the thermal shrinkage and glass transition temperature of rubber. Kauch. i rez. 23 no. 3:21-25 Mr '64. (MIRA 17:5)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

[illegible]

the addition of up to 20% of any of the enumerated fillers or of up to 30%
Rubrax. The calculated values for β and [illegible] matched closely those [illegible]

[illegible]

L 00312-66 EWP(e)/EWT(m)/EWP(w)/EPF(c)/EWP(i)/EWP(j)/T/EWP(t)/EWP(b) 57
BW/JD/WW/DJ/GS/RM/WH 55

ACCESSION NR: AT5020433 UR/0000/65/000/000/0072/0075

AUTHORS: Bartenev, G. M.; Yel'kin, A. I.; Gridunova, Ye. B.; Voyevodskaya, M. V.

TITLE: Effects of lubricants on friction of rubber on metal at low temperatures

SOURCE: AN SSSR. Nauchnyy sovet po treniyu i smazkam. Teoriya smazochnogo deystviya i novyye materialy (Theory of lubricating action and new materials). Moscow, Izd-vo Nauka, 1965, 72-75

TOPIC TAGS: rubber, friction, lubricant, low temperature effect, low temperature research/ TsIATIM 221 lubricant, TsIATIM 205 lubricant

ABSTRACT: The effects of solid lubricants (fine dispersion graphite type KT and molybdenum disulfide), liquid lubricant No. 3, and lubricants TsIATIM-221 (based on No. 3) and TsIATIM-205 on the maximum friction between various rubbers and steel were investigated in the temperature range 50 to -200C at a constant load of 2 kg/mm^2, contact area 1.5 cm^2, and sliding speed 1 mm/min on the apparatus described by G. M. Bartenev, V. V. Lavrent'yev, and A. I. El'kin (Pribory dlya issledovaniya sily treniya vysokoelasticheskikh polimerov. Teoriya treniya i iznosa. Izd-vo "Nauka," 1965). The unlubricated friction force of unfilled rubber (based on SKF-26) on steel was found to increase slowly from 4.5 kg at 20C

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ACCESSION NR: AT5020433

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to 5 kg at -30C, drop sharply to ≈ 1 kg at that temperature, and remain approximately constant to temperatures of -200C. Graphite lubrication decreased the friction force to ≈ 0.6 kg (almost constant from 20 to -200C), while molybdenum disulfide was 15-20% less effective than graphite. The friction force for unfilled rubber (based on SKMS-10) on steel without lubrication was found to be larger than with liquid lubrication over a range of temperatures (depending on the lubricant) and was smaller over other temperature ranges (see Fig. 1 on the Enclosure). Orig. art. has: 2 figures.

ASSOCIATION: Nauchnyy sovet po treniyu i smazkam, AN SSSR (Scientific Committee on Friction and Lubrication, AN SSSR) 44

SUBMITTED: 22May65 ENCL: 01 SUB CODE: FP, TD

NO REF SOV: 005 OTHER: 000

Card 2/3

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ENCLOSURE: 01

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ACCESSION NR: AT5020433

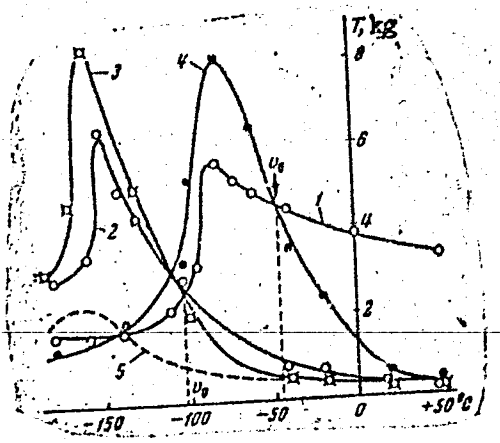

Fig. 1.

1- without lubricant; 2- lubricant No. 3; 3- TsIATIM-221; 4- TsIATIM-205; 5- running friction with TsIATIM-221

dg

Card 3/3

[illegible] methods for automation [illegible]

tically elastic deformation (deformation [illegible] When a filler is present, the propor-

[illegible] not play a role. [illegible] the con-

VOYEVODSKAYA, Ye.N., inzh.

Evaluating the propelling characteristics of catamarans. Sudostroenie 30 no.7:6-8 Jl '64. (MIRA 18:9)

VOYEVODSKAYA, YE. N.

Activity of the Scientific-Technical Society of the Shipbuilding Industry (Papers Presented at the Tenth Scientific-Technical Conference on Ship Theory

Sudostroyeniye, No 4, 1960

O. A. Firsov, Cand Tech Sci
I. I. Minlovich, Dr. Tech Sci

Papers presented:

O. N. Tkachuk, Engineer, "Investigation of the Additional Resistance of Recesses and Apertures in a Ship Hull."

S. D. Chudinov, Cand Tech Sci, "The Influence of Rudder and Screw Interaction on Ship Speed.

P. L. Lifenko, Engineer, "Calculation of Noncavitating Screw Propellers."

Ye. D. Panov, Engineer, "Measurement of the Momentary Force Acting on a Blade of a Bladed Propelling Device."

A. A. Rusetskiy, Cand Tech Sci, "Hydrodynamics of Controllable Pitch Propellers."

Ye. N. Voyevodskaya, Engineer, V. K. Turval, Engineer, "Hydrodynamic Characteristics of Four-Blade Screw Propellers in Kort Nozzles."

A. A. Epshteyn, Dr Tech Sci, "Determination of the Amount of Gas Needed to Maintain a Cavern Behind a Body Moving at Small Froude Numbers."

VOYEVODSKIY, A.S. (Moskva); OSTROUMOV, V.V. (Moskva)

Electrophoretic deposition of strontium titanate. Koll. zhur. 25 no.4:392-397 Jl-Ag '63. (MIRA 17:2)

ABRAMOVA, N.A., nauchn. sotr.; VOYEVODSKIY, A.S., nauchn. sotr.;
GINZBURG, O.F., doktor khim. nauk; YERSHOVA, Ye.TS., kand.
khim. nauk; KOLYCHEV, V.B., nauchn. sotr.; MAR'YANOVSKAYA,
K.Yu., nauchn. sotr.; MAZEL', R.L., nauchn. sotr.;
MEL'NIKOVA, N.S., nauchn. sotr.; PLATUNOVA, N.B., nauchn.
sotr.; REMOZOV, A.L., kand. khim. nauk; UTOCHKIN, V.V.,
nauchn. sotr.; KHAVIN, Z.Ya., kand. khim. nauk; EFROS, L.S.,
doktor khim. nauk; NIKOL'SKIY, B.P., glav. red.; RABINOVICH,
V.A., kand. khim. nauk, zam. glav. red.; GRIGOROV, O.N.,
doktor khim. nauk, red.; POZIN, M.Ye., doktor tekhn. nauk,
red.; PORAY-KOSHITS, B.A., doktor khim. nauk, red.;
RACHINSKIY, F.Yu., kand.khim. nauk, red.; ROMANKOV, P.G.,
doktor tekhn. nauk, red.; FRIDRIKHSBERG, D.A., kand. khim.
nauk, red.; ZONIS, S.A., red.; LEVIN, S.S., tekhn. red.;
ERLIKH, Ye.Ya., tekhn. red.

[Handbook of chemistry] Spravochnik khimika. 2. izd., perer. i dop. Leningrad, Goskhimizdat. Vol.2. [Basic properties of inorganic and organic compounds] Osnovnye svoistva neorganicheskikh i organicheskikh soedinenii. 1963. 1167 p. (MIRA 17:3)

1. Chlen-korrespondent AN SSSR (for Nikol'skiy).

EWT . EWT(m)/BDS [illegible] AFFTC/APGC/ASD/ESD-3/SSD Pab-4

L 14419-63
RH/JD
ACCESSION NR: AP3004082

S/0069/63/025/004/0392/0397

AUTHOR: Voyevodskiy, A. S. (Moscow); Ostroumov, V. V. (Moscow)

60
67

TITLE: Electrophoretic deposition of strontium titanate 27 21

SOURCE: Kolloidny*y zhurnal, v. 25, no. 4, 1963, 392-397

TOPIC TAGS: ferroelectric film, high-dielectric-constant film, strontium titanate, barium titanate, methanol, organic dispersing media, colloidal suspension, strontium titanate suspension, electrophoresis, electrophoresis rate, zeta potential, suspension aging, strontium oxide dissolution, streaming potential, strontium titanate diaphragm, titanium dioxide diaphragm, isopropyl alcohol

ABSTRACT: The electrophoresis of strontium titanate [colloidal] suspensions has been investigated as a method of depositing a ferroelectric film with a high dielectric constant on a platinized glass plate. Suspensions containing 1—10 g of strontium titanate per 100 ml of a liquid dispersing phase were prepared by grinding the mixtures in a colloid ball mill. Suspensions prepared with methanol or isopropyl alcohol were found to be the most stable. Only methanol was used in the subsequent experiments. Electrophoretic films deposited on

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L 14419-63
ACCESSION NR: AP3004082

the cathode [at room temperature] acquired high mechanical strength after heat treatment at 1200C for 2—3 hr. They had a dielectric constant of about 3000 at room temperature. The weight, and hence the thickness, of the films was found to increase when suspension concentration, electrophoresis time, or potential gradient were increased. The weight increase was linear in the 2—10 min interval. Comminution (or dispersion) time is also a factor determining cathodic deposit weight, as shown in Fig. 1 of the Enclosure. Two sets of experiments showed that 1) electrophoresis of a freshly prepared suspension produced a deposit heavier than that of a suspension previously subjected to electrophoresis, and 2) a weight decrease occurred on electrophoresis of a suspension prepared with methanol pretreated by application of an electric current. It was concluded that current flow through either a suspension or pure methanol produces an accumulation in the liquid of electrolysis products which are detrimental to the electrophoretic-deposition rate. These products cause the anomalous peak on the curves of weight versus dispersion time (Fig. 1). The decrease in deposit weight with aging of the suspension is a result of the change in zeta potential and in electrophoresis rate caused by partial dissolution of strontium oxide in methanol. Comparative measurements of the streaming potential in methanol across a diaphragm of titanium dioxide or of strontium

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titanate having a wide particle-size distribution confirmed the hypothesis that strontium oxide is leached out of the titanate with methanol. Charge reversal occurred after 14—15 days of uninterrupted flow of methanol through the strontium titanate diaphragm; the titanium dioxide diaphragm remained negatively charged. The zeta potential dropped within 28 days from +71 to -8 mv in the strontium titanate system, but remained constant at -11 mv in the titanium dioxide system. The observed decrease in electrical conductivity of methanol in the pores of the strontium titanate diaphragm cannot by itself lead to charge reversal. "The authors are grateful to S. P. Tibilov for suggesting the subject of research." Orig. art. has: 7 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 23Apr63 DATE ACQ: 15Aug63 ENCL: 01

SUB CODE: PH, CH NO REF SOV: 005 OTHER: 001

L 14419-63
ACCESSION NR: AP3004082

ENCLOSURE:

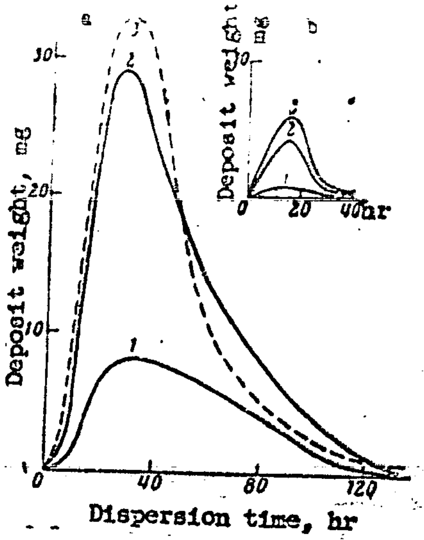

Fig. 1. Deposit weight versus comminution time

Strontium titanate concentration: 5 g (a) and 1 g (b) per 100 ml methanol. Potential gradient: 1 - 5 v/cm; 2 - 15 v/cm; 3 - 25 v/cm.

Card 4/4

VOYEVODSKIY, Sergey Alekseyevich, inzh.; KHASKIN, Abram
Mikhaylovich, inzh.; KRASNITS, Zyama Yakovlevich, inzh.;
ALENICHEVA, Ye.A., inzh., retsenzent; ZHAVORONKOVA, N.N.,
inzh., retsenzent; KYUN, S.A., kand. tekhn. nauk,
retsenzent; PUCHKO, N.F., inzh., retsenzent; UMANOV, I.I.,
inzh., retsenzent; LEUTA, V.I., inzh., retsenzent

[Course in mechanical drawing for correspondence technical
schools] Kurs chercheniia dlia zaochnykh tekhnikumov. Kiev,
Tekhnika. Pt.2. 1965. 319 p. (MIRA 18:8)

VOZDVIZHENSKIY, V.M.; LIFANOVA, L.I.; VOYEVODINA, S.S.

Determining the heterogenization of alloys from the relative difference in microhardness. Zav. lab. 31 no. 12:1473-1475 '65 (MIRA 19:1)

1. Rybinskiy vecherniy tekhnologicheskiy institut.

KHASKIN, Abram Mikhaylovich; VOYEVODSKIY, Sergey Alekseyevich; KRASNITS, Zyama Yakovlevich; KROLEVETS, M.S., kand. tekhn. nauk, retsenzent; UMANOV, I.I., inzh., retsenzent; ALENICHEVA, Ye.A., inzh., retsenzent; PUCHKO, N.F., inzh., retsenzent; KUTSEVOL, A.I., inzh., retsenzent; LEUTA, V.I., inzhener, retsenzent; KRAVETS, V.I., inzhener, red.-izd-va; STARODUB, T.A., tekhn. red.

[Drawing course for technical correspondence schools] Kurs cherchenia dlia zaochnykh tekhnikumov. Kiev, Gostekhizdat USSR. Pt.1. 1963. 271 p. (MIRA 16:12)
(Geometrical drawing--Instruction)

VOYEVODSKIY, V.

Life gives you the "green light..." IUn.tekh. 5 no.7:6-8 Jl '61.
(MIRA 15:1)

1. Chlen-korrespondent Akademii nauk SSSR.
(Vocation)

DZIZENKO, A. K.; ZAYEV, Ye. Ye.; YELYAKOV, G. V.; MOLIN, Yu. N.;
VOYEVODSKIY, V. V.

NMR spectra of genins from glycosides of Panax ginseng C. A. Mey. Dokl. AN SSSR 156 no. 1:92-94 My '64. (MIRA 17:5)

1. Dal'nevostochnyy filial im. V. L. Komarova Sibirskogo otdeleniya AN SSSR i Institut khimicheskoy kinetiki i goreniya Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Voyevodskiy).

LEBEDEV, Ya.S.; TIKHOMIROVA, N.N.; VOYEVODSKIY, V.V., otv. red.; TERENT'YEVA, E.N., redaktor

[Atlas of electron paramagnetic resonance spectra] Atlas spektrov elektronnogo paramagnitnogo rezonansa. Moskva, Izd-vo "Nauka." No.2. [Theoretically calculated symmetrical spectra with a complex hyperfine structure] Teoreticheskie rasschitannye simmetrichnye spektry so slozhnoi sverkhtonkoi strukturoi. 1964. 197 p. (MIRA 17:7)

1. Akademiya nauk SSSR. Institut khimicheskoy fiziki. 2. Laboratoriya khimicheskoy radiospektroskopii Instituta khimicheskoy fiziki AN SSSR (for Lebedev).

VOROB'YEVA, T.P.; VOYEVODSKIY, V.V.; PURMAL', A.P.

Studies of catalase-active systems. Part 2. Zhur. fiz. khim. 36 no.11:2532-2536 N'62. (MIRA 17:5)

1. Institut khimicheskoy fiziki AN SSSR.

VOYEVODSKIY, V.V.; SOLOUKHIN, R.I.

Mechanism and limits of the spontaneous chain ignition of hydrogen with oxygen in shock waves. Dokl. AN SSSR 155 no.6:1425-1428 F '64. (MIRA 17:2)

1. Institut gidrodinamiki Sibirskogo otdeleniya AN SSSR i Institut khimicheskoy kinetiki i gorniya Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Voyevodskiy).

L 23822-66 EWT(m)/EWP(j)/T WW/JW/WE/RM SOURCE CODE: UR/0426/66/019/002/0083/0088

ACC NR: AP6014401

AUTHOR: Poroykova, A. I.; Voyevodskiy, V. V.; Nalbandyan, A. B.

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: Oxidation mechanism of propane in the presence of hydrogen bromide and bromine. I. The reaction of propyl and isopropyl hydroperoxides with hydrogen bromide and bromine in the gas phase

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 19, no. 2, 1966, 83-88

TOPIC TAGS: hydrocarbon oxidation, reaction mechanism, combustion

ABSTRACT: It was found that isopropyl hydroperoxide and n-propyl hydroperoxide react with HBr and Br_2 at room temperature to form, respectively, acetone and a mixture of propionaldehyde and n-propyl alcohol. The reaction between isopropyl hydroperoxide and HBr follows second-order kinetics; the reaction rate constant in the range 18—62C is

$$\boxed{k_1 = 0,8\cdot10^{-11} e^{-\frac{9200\pm1500}{RT}} \frac{cm^3}{molecule\cdot sec},}$$

The investigation of the reaction of hydroperoxides with Br_2 is complicated by the

UDC: 541.124+542.943+547.213

Card 1/2

L 23822-66

ACC NR: AP6014401

fact that the reaction takes place at the wall, as well as in the homogeneous phase. [VS]
Orig. art. has: 5 figures.

SUB CODE: 21/ SUBM DATE: 01Sep65/ ORIG REF: 012/ OTH REF: 003/ ATD PRESS: 4247

Card 2/2

L 23823-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/JW/WE/RM

ACC NR: AP6014402 SOURCE CODE: UR/0426/66/019/002/0089/0095

AUTHOR: Poroykova, A. I.; Voyevodskiy, V. V.; Nalbandyan, A. B.

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: Oxidation mechanism of propane in the presence of hydrogen bromide and bromine. II. Evaluation of the rate constant of the reaction of the RO_2 radical with hydrogen bromide

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 19, no. 2, 1966, 89-95

TOPIC TAGS: hydrocarbon oxidation, reaction mechanism, propulsion

ABSTRACT: The photochemical oxidation of propane, initiated by addition of small amounts of hydrogen bromide (0.5—5%) was studied in the temperature range 150—240C. Acetone was found to be the main product of oxidation. The small amounts of acetaldehyde formed in the course of the reaction easily undergo further reactions under the experimental conditions employed. The fast stream method used made it possible to measure the amounts of acetaldehyde formed and to determine the ratio of the reaction rate constants for reactions (1) and (2):

$$\begin{tikzcd}
(CH_3)_2CHO_2 + HBr \arrow[r] \arrow[d] & (CH_3)_2CHO_2H + Br \arrow[r] & CH_3COCH_3 + Br + H_2O. \quad (1) \\
CH_3COCH_3 + Br + H_2O & &
\end{tikzcd}$$

$$(CH_3)_2CHO_2 \longrightarrow CH_3CHO + CH_2O. \qquad (2)$$

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ACC NR: AP6014402

The ratio of the reaction rate constants was found to be

$$\frac{K_1}{K_2} = 10^{-22.0}\, e^{\frac{15700}{RT}}\ \frac{\mathrm{cm}^3}{\mathrm{molecule}}.$$

[VS]

Orig. art. has: 4 figures.

SUB CODE: 21/ SUBM DATE: 01Sep64/ ORIG REF: 015/ OTH REF: 004/ ATD PRESS: 4247

Card 2/2

L 23824-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/JW/WE/RM

SOURCE CODE: UR/0426/66/019/002/0096/0110

ACC NR: AP6014403

AUTHOR: Poroykova, A. I.; Voyevodskiy, V. V.; Nalbandyan, A. B.

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: The mechanism of propane oxidation in the presence of hydrogen bromide and bromine. III. Photochemical oxidation of propane in the presence of Br_2

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 19, no. 2, 1966, 96-110

TOPIC TAGS: hydrocarbon oxidation, reaction mechanism, combustion

ABSTRACT: The photochemical oxidation of propane, initiated by addition of Br_2, was studied in the temperature range 160—240C. In the early phase of the reaction, when HBr is present only in negligible amounts, acetone was found to be the predominant reaction product. This observation, together with a number of kinetic relationships, as well as the absence of CH_3OH in the reaction products, indicate that the formation of acetone can best be explained by the following reactions alone:

$$\text{iso-}C_3H_7O_2 + HBr \begin{cases} \nearrow (C_3H_7O_2H) + Br \\ \searrow CH_3COCH_3 + HBr + OH. \end{cases}$$

$$\text{iso-}C_3H_7O_2 + C_3H_8 \longrightarrow \text{iso-}C_3H_7O_2H + C_3H_7,$$

$$\text{iso-}C_3H_7O_2H \xrightarrow[Br_2]{HBr} CH_3COCH_3 + H_2O.$$

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UDC: 541.124+542.943+547.213

Card 1/2

ACC NR: AP6014403

The possible reaction $\text{iso-C}_3\text{H}_7\text{O}_2 + \text{Br}_2 \longrightarrow \text{CH}_3\text{COCH}_3 + \text{HBr} + \text{BrO}$, and the mechanism of acetone and HBr formation, which is in good agreement with the experimental data, are examined. Orig. art. has: 6 figures. [VS]

SUB CODE: 21/ SUBM DATE: 04Sep65/ ORIG REF: 016/ OTH REF: 025/ ATD PRESS: 4247

L 26113-66 EWP(j)/EWT(m) RM

ACC NR: AP6011687 SOURCE CODE: UR/0063/66/011/002/0126/0136

AUTHOR: Voyevodskiy, V. V. (Academician)

85
B

ORG: none

TITLE: Free radicals in modern chemistry

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 11, no. 2, 1966, 126-136

TOPIC TAGS: free radical, polymerization, combustion, chain reaction, chemical kinetics, electric paramagnetic resonance, alkyl radical, pyrolysis, mass spectrometer, magnetic modulation

ABSTRACT: The present article is from an issue devoted to the chemistry of free radicals and which coincides with the 70th birthday of Academician N. N. Semenov. V. V. Voyevodskiy, author of the article, traces the development of free-radical chemistry from Gomberg's discovery of the triphenylmethyl radical to the present time. He attributes the upswing in the intensity of free-radical work in the early 1920s to two factors: the discovery of the generation of relatively long-lived particles, eventually shown to be atoms, during the passage of diatomic gases (H_2, O_2, N_2) through an electrical discharge, and Nerst's elegant hypothesis of alternating formation of H and Cl atoms in the course of the photochemical chlorination of hydrogen. Two directions of free-radical research began to emerge at that time. The chemical approach dealt with the investiga-

Card 1/4 UDC: 547.024

L 26113-66

ACC NR: AP6011687

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tion of elementary reactions of the type Na + RX → NaX + R˙, and those of atoms H, O, etc., with various molecules. The other approach concentrated on the chemical and physical methods of identification and measurement of concentrations of atoms and free radicals in different systems. The identification of "active" hydrogen and oxygen with the atomic state, and Paneth's purely chemical demonstration of the generation of alkyl radicals by pyrolytic techniques belong to that period. The question faced by the chemists of that period was whether this area which, after all, seemed to apply only to a relatively small number of reactions, warranted the expenditure of the large effort apparently needed for its development. In Voyevodskiy's view the deciding factor was the discovery of branched chain reactions by N. N. Semenov and, almost simultaneously, by Hinshelwood in the late twenties. Semenov's monograph Tsepnyye reaktsii (Chain Reactions) (1934) is considered by Voyevodskiy the beginning of a broad, world-wide investigation of free radical and radical chain reaction. There was a considerable delay before polymer chemists recognized the radical chain character of many reactions in their area of interest. While emission spectroscopy of free radicals in the gas phase yielded considerable information from the early thirties on, its shortcoming was that the relative emission intensities are determined not by the concentrations of the emitting particles, but by the

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L 26113-66
ACC NR: AP6011687

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probabilities of their excitation. Absorption spectroscopy proved more useful in this respect.

Probably the most important of the more recent analytical techniques for the study of free radicals is the method of electron paramagnetic resonance, which directly reflects the behavior of the unpaired electron. The rapidly growing application of EPR to free-radical work in the USSR was made possible by the appearance in series production of the EPR-2-IKhF (RE-13-01) radiospectrometer. Voyevodskiy points out that the development of this instrument is one of the still regrettably rare examples of cooperation between Soviet chemists, physicists, electronics engineers, and instrumentation specialists; he pleads that such cooperation is indispensable in modern research.

Many more aspects of free-radical chemistry are presented in the article. Voyevodskiy's prognosis is for an even more rapid expansion of free-radical work in the next 10—15 years. Crossed atomic and molecular beams, the extension of pulsed techniques to other regions of the spectrum, improved radical mass spectrometers with magnetic modulation, more sensitive EPR spectrometers, relaxation time studies, NMR measurements of weak interactions of free radicals with the medium, and new

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L 26113-66

ACC NR: AP6011687

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chromatographic methods applicable to kinetic studies of free-radical reactions, are only a few of the many possible approaches to free-radical studies. The part played by free radicals in biological processes has not even been touched; the next decade or two will make the present state of knowledge of free radicals appear as mere rudiments. Voyevodskiy concludes by reiterating the importance of Semenov's contribution to this field. Orig. art. has: 3 formulas. [ATD PRESS: 4223-F]

SUB CODE: 07, 20 / SUBM DATE: none / ORIG REF: 009 / OTH REF: 008

Card 4/4 CC

L 26001-66 EWT(m)/EWP(j)/T DS/WE/RM

ACC NR: AP6015616 SOURCE CODE: UR/0020/66/168/002/0386/0387

AUTHOR: Poroykova, A. I.; Voyevodskiy, V. V. (Academician); Nalbandyan, A. B. (Academician AN ArmSSR) 38 B

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

TITLE: Quantum yield of acetone and length of the reaction chain in photochemical oxidation of propane in the presence of bromine 7

SOURCE: AN SSSR. Doklady, v. 168, no. 2, 1966, 386-387

TOPIC TAGS: photochemical oxidation, propane, acetone, quantum yield, chain reaction kinetics

ABSTRACT: Bromine-initiated photochemical oxidation of propane has been studied to determine quantum yield Φ of the main product, acetone, and the length of the reaction chain, $\nu = 1/2\Phi$. Oxidation was carried out in a jet vacuum apparatus at 202C with illumination by a mercury quartz lamp under given partial pressures of reactants. The degree of conversion was small and the rate of acetone formation constant. The formula

$$\Phi = \frac{1}{I_0} \frac{d(CH_3COCH_3)}{dt}$$

was used to calculate quantum yield, where I_0 is the rate of initiation and

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UDC: 541.7

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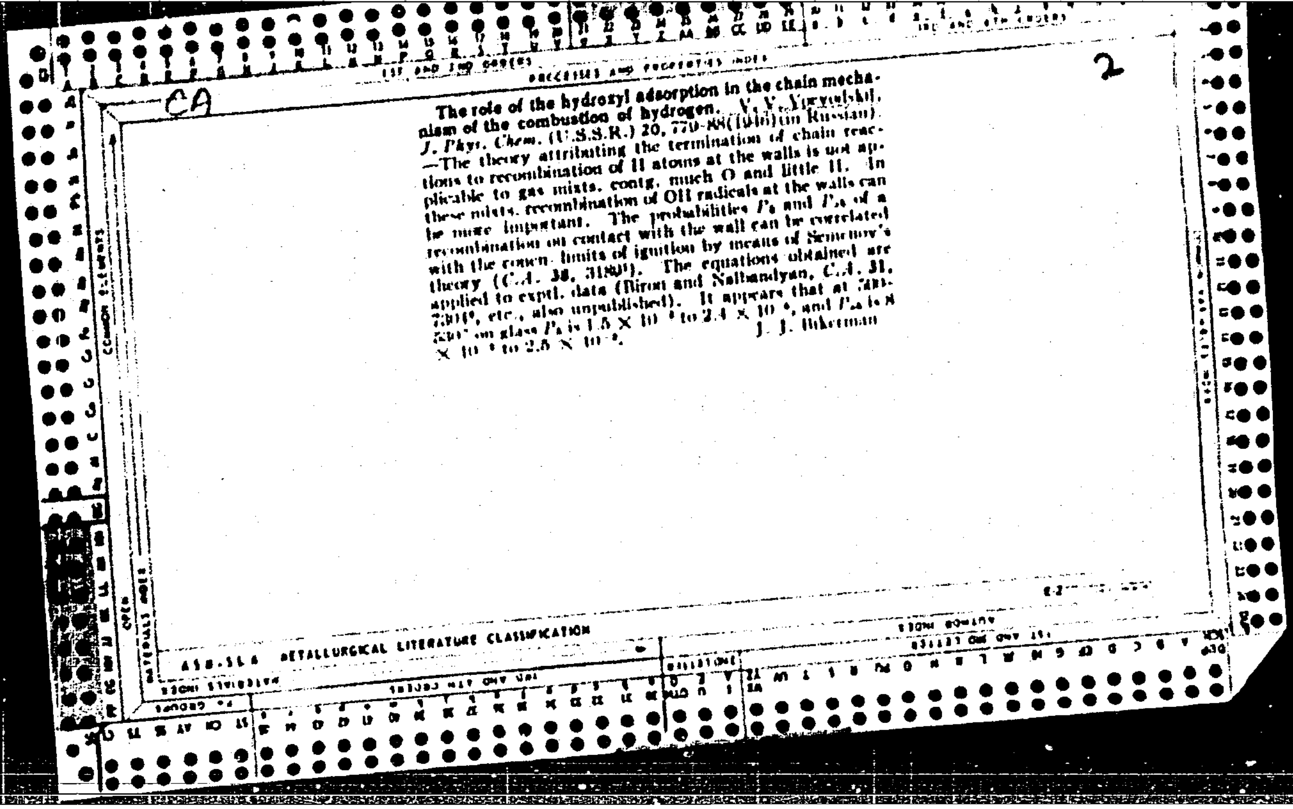
L 26001-66

ACC NR: AP6015616

$d(CH_3COCH_3)/dt$ is the rate of acetone formation. I_0 was determined by measuring the rate of HBr formation in the photochemical reaction of hydrogen and bromine. The latter reaction was carried out in the same apparatus at 266C. The rates of acetone and HBr formation were calculated from the time-dependence of the acetone and HBr yields. Φ of acetone was found to be 75 and $\nu = 37$. Orig. art. has: 1 figure and 8 formulas. [JK]

SUB CODE: 07/ SUBM DATE: 17Aug65/ ORIG REF: 006/ OTH REF: 006/ ATD PRESS: 4255

Card 2/2


CA
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PROCESSES AND PROPERTIES INDEX
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

The role of the hydroxyl adsorption in the chain mechanism of the combustion of hydrogen. V. V. Voevodskii. *J. Phys. Chem.* (U.S.S.R.) 20, 779-88 (1946) (in Russian). —The theory attributing the termination of chain reactions to recombination of H atoms at the walls is not applicable to gas mixts. contg. much O and little H. In these mixts. recombination of OH radicals at the walls can be more important. The probabilities P_H and P_{OH} of a recombination on contact with the wall can be correlated with the concn. limits of ignition by means of Semenov's theory (*C.A.* 38, 3180). The equations obtained are applied to exptl. data (Biron and Nalbandyan, *C.A.* 31, 7301, etc., also unpublished). It appears that at 520-530° on glass P_H is 1.5×10^{-4} to 2.4×10^{-4}, and P_{OH} is 8×10^{-3} to 2.5×10^{-2}.

J. J. Bikerman

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

2

The slow oxidation of hydrogen and the third ignition limit. V. V. Voevodskii (Inst. Chem. Phys., Acad. Sci. U.S.S.R., Moscow). *J. Phys. Chem.* (U.S.S.R.) 20, 1285-98(1946)(in Russian).—The mechanism of the combustion of H_2 postulated by Lewis and Elbe is supplemented by the reaction $HO_2 + H_2O = H_2O_2 + OH$. This reaction accounts for the acceleration of combustion caused by H_2O after a latent period and the absence of this acceleration in the beginning of combustion when the concn. of HO_2 is negligible (cf. Chirkov, *C.A.* 32, 2008⁹). Calcn. shows that, before H_2O can catalyze the combustion, the partial pressure of HO_2 radicals can exceed several mm. Hg.

J. J. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VOYEVODSKIY, V.V.

PA 26T58

USSR/Physics
Hydrogen - Combustion
Adsorption

Jan 1947

"The Role of the Adsorption of Hydroxyl in the Chain Mechanism of Hydrogen Combustion," V. Voyevodskiy, Academy of Sciences of the USSR, 16 pp

"Acta Physicochimica URSS" Vol XXII, No 1

A description is given of the mechanism of hydrogen combustion at low pressures. Lewis and Elbe's explanation is amplified by the inclusion of reaction at the container wall.

BS 26T58

PA 67T14

VOYEVODSKIY, V.V.

USSR/Chemistry - Hydrogen, Oxidation of Apr 1948
Chemistry - Catalysts

"Speeding Up the Slow Reaction of the Oxidation of Hydrogen by Steam," V.V. Voyevodskiy, Lab of Elem Processes, Inst of Phys Chem, Acad Sci USSR, Moscow, 3 pp

"Zhur Fiz Khim" Vol XXII, No 4

Maintains, and substantiates by mathematical computation, theories on the homogeneous mechanism of acceleration of the slow reaction of the oxidation of hydrogen. Submitted Jul 1947.

[illegible] 67T14

VOEVODSKY, V.V.

V. V. Voevodsky and V. L. Tal'roze, The influence of addition of water and of the dimensions of the reaction vessel on the second ignition limit of a mixture of hydrogen with oxygen. Pp. 1192-1204

A dynamic method has been worked out for measuring the second ignition limit for lean mixtures of hydrogen and oxygen, which method excludes the lowering of the limit by the water formed during the experiment.

Inst. of Chemical Physics of the Academy
of Sciences U.S.S.R.
Lab. of Elementary Processes of the
Moscow Lomonosov State University
Chair of Chemical Kinetics, Moscow
February 19, 1948

SO: Journal of Physical Chemistry (USSR) 22, 10, 1948.

USSR/Chemistry - Combustion, of Hydrogen Oct 48

Chemistry - Combustion, Mechanism of

"The Influence of Water Additions and Dimensions of the Testing Retort on the Secondary Combustion Limit of Hydrogen and Oxygen Mixtures," V. V. Voyevodskiy, V. L. Tal'roze, Inst Phys Chem, Acad Sci USSR, Lab of Elementary Processes, Moscow State U imeni Lomonosov, Chair of Chem Kinetics, Moscow, 13 pp

"Zhur Fiz Khimii" No 10

Treats subject under: (1) determination of second

LC 21/49T11

USSR/Chemistry - Combustion, of Hydrogen (Contd) Oct 48

combustion limit, (2) experiments with water additions, (3) technique of experiments using pyrex rod, (4) calculations of constant K_8 and probability of destruction of HO_2 radical on pyrex, and (5) conclusions. Submitted 19 Feb 48.

LC 21/49T11

PROCESSES AND PROPERTIES INDEX

CA

24

Kurs Teorii Goreniya, Detonatsii i Vzryva (A Course in the Theory of Combustion, Detonation, and Explosion). Kniga I. Teplovoi Vzryv i Rasprostranenie Plameni v Gazakh (Thermal Explosion and Propagation of Flames in Gases). By Ya. B. Zel'dovich and V. V. Voevodskii. Kniga II. Turbulentnoe i Geterogennoe Gorenie (Turbulent and Heterogeneous Combustion). By Ya. B. Zel'dovich and D. A. Frank-Kamenetskii. Moscow: Izdatel. Moskov. Mekhan. Inst. 1947. 300 pp. Reviewed in *Uspekhi Khim.* 17, 377-8(1948).

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

LEWIS, Bernard; ELBE, Guenther von, VOYEVODSKIY, V.V., [translator]; FRANK-KAMENETSKIY, D.A., redaktor; GUROV, K.P., redaktor; KORNILOV, B.I., tekhnicheskiy redaktor.

[Combustion, flames and explosions of gases. Translation from the English by V.V.Voyevodskii] Gorenie, plamia i vzryvy v gazakh. Perevod s angliiskogo V.V.Voevodskogo. Pod red. i s dopolneniiami D.A. Frank-Kamenetskogo. Moskva, Gos.izd-vo inostrannoi lit-ry, 1948. 446 p.

(Gases)(Combustion)(Explosions)(Flame) (MIRA 8:4)

USSR/Physics
Catalysis
Contact Action

Nov 48

PA 55/49T84

"Recombination of Atoms on Solid Surfaces," V. V. Voyevodskiy, G. K. Lavrovskaya, Inst of Chem Phys, Acad Sci USSR, $2\frac{1}{2}$ pp

"Dok Ak Nauk SSSR" Vol LXIII, No 2

Experiments corroborate theory that surface recombination leads only to a qualitative comparison of the effectiveness of various surfaces in relation to recombinations of oxygen atoms. In plain and molybdenum glass, quartz, glass covered with KCl,

55/49T84

USSR/Physics (Contd)

Nov 48

LiCl and $K_2B_4O_7$, atomic oxygen recombines weakly, but in platinum, treated by cathode atomization and in quartz, processed with $ZnO.Cr_2O_2$ or $AgNO_3$, such recombination is fairly strong. Submitted by Acad N. N. Semenov 9 Sep 48.

55/49T84

VOYEVODSKIY

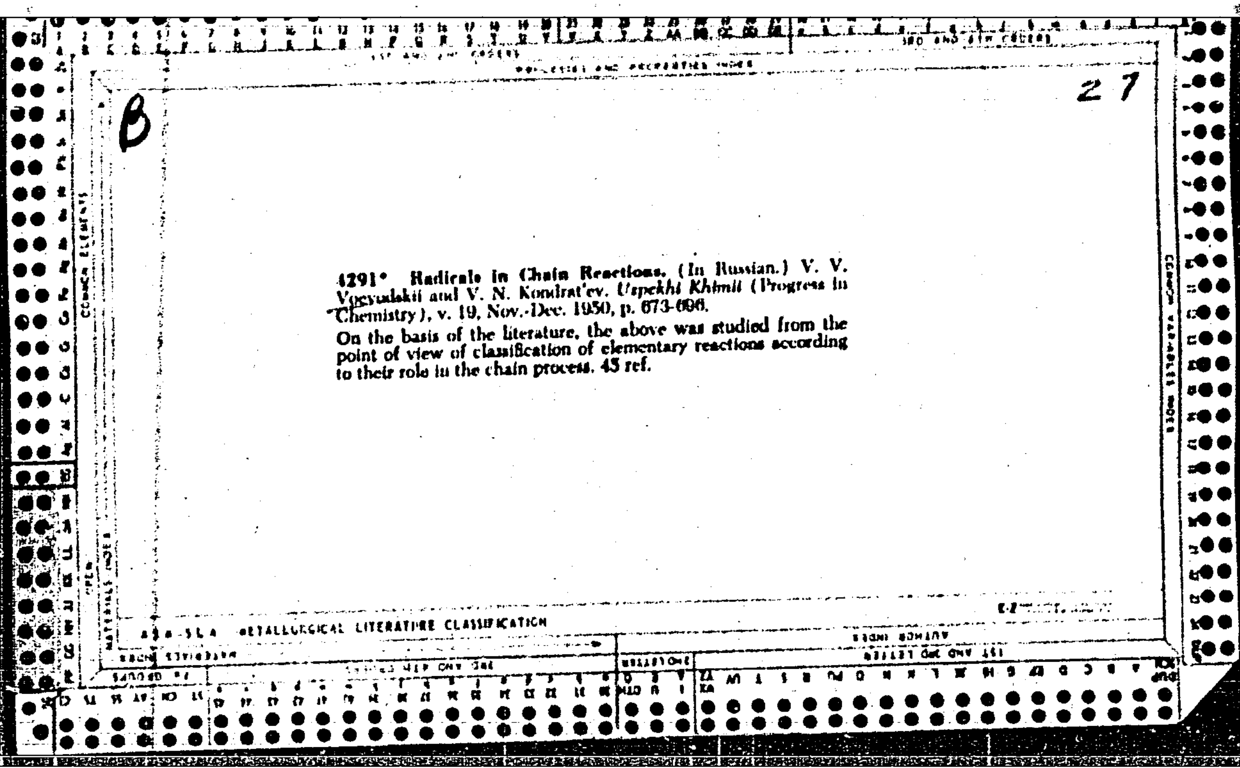
PROCESSES AND PROPERTIES INDEX

C A

2

Nalbandyan, A. B., and Voevodskii, V. V.: Mekhanizm Okisleniya i Goreniya Vodoroda (Mechanism of the Oxidation and Combustion of Hydrogen). Moscow-Leningrad: Inst. Khim. Fiz. Izdatel. Akad. Nauk S.S.S.R. 1949. R9. Reviewed in *Uspekhi Khim.* 18, 376(1949).

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION


ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

B

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4291* **Radicals in Chain Reactions.** (In Russian.) V. V. Voevodskii and V. N. Kondrat'ev. *Uspekhi Khimii* (Progress in Chemistry), v. 19, Nov.-Dec. 1950, p. 673-696.

On the basis of the literature, the above was studied from the point of view of classification of elementary reactions according to their role in the chain process. 45 ref.

CA

Experimental study of the slow reaction of the oxidation of hydrogen and of the third ignition limit. V. A. Poltorak and V. V. Voevodskiĭ (Univ. Moscow). *Zhur. Fiz. Khim.* 24, 309-310(1950); cf. *C.A.* 43, 1636*d*.—The ignition temp. *T* of a mixt. 2 $H_2 + O_2$ in a glass vessel washed with HNO_3 and then H_2O was approx. 586° at 720, 594° at 620, and 605° at 517 mm. Hg. Addn. of 2 mol. % of H_2O lowered *T* by about 3°. In glass and quartz vessels coated with KCl *T* was 18-20° higher. The ignition occurred after a latent period τ which was shorter the higher the pressure and the temp. and was independent of the nature of the surface. In clean glass the slow combustion at $< T$ was autocatalytic, whereas in the KCl-coated glass the rate of slow combustion was const. in time. The energy of activation was 25,000 and 36,000 in clean and coated glass, resp. The rate consts. of the reactions $HO_2 + H_2 = H_2O_2 + H$ and $HO_2 + H_2O = H_2O_2 + OH$ were calcd. to be 1.7×10^{-18} exp. $(-24,000/RT)$ and 2×10^{-14} exp. $(-8000/RT)$ cc./sec. The energy of activation of the reaction $H_2 + O_2 = 2OH$ was about 49,000 cal./mol. The duration of τ in clean quartz was independent of whether the gas did or did not contain intermediate reaction products, thus showing the thermal nature of the ignition. The ignition in a coated vessel had a chain mechanism.

J. J. Bikerman

USSR/Chemistry - Gas Kinetics Catalysis Sep 51

PA 192T40

"Reactions of Atoms of Hydrogen and Oxygen on Solid Surfaces," G. K. Lavrovskaya, V. V. Voyevodskiy, Acad Sci USSR, Inst of Chem Phys, Moscow State U imeni M. V. Lomonosov

"Zhur Fiz Khim" Vol XXV, No 9, pp 1050-1058

Studied recombination of H or O atoms into mols in the following systems: H + Pt; O + Pt; H + $ZnO.Cr_2O_3$; O + $ZnO.Cr_2O_3$; O + Cr_2O_3; O + MgO; H + MoO_3; O + MoO_3; H + carbon; O + ZnO; H + ZnO;

LC 192T40

USSR/Chemistry - Gas Kinetics (Contd) Sep 51

H + Cr_2O_3; O + PbO; H + PbO; H + MgO; O + quartz; O + KCl on quartz; H + $K_2B_4O_7$ on quartz; H or O + NaCl, LiCl, or HNO_3 on glass. Describes methods of depositing catalyst, conditions of conversion (including occurrence of the so-called "burning surface," i. e., a sharp rise of temp to 1,000° and higher), and other observations.

LC 192T40

VOYEVODSKIY, V. V.

USSR/Chemistry - Hydrocarbons 21 Jul 51

"Empirical Equation for Calculating the Energy of Dissociation of CH- and CC-Bonds in Molecules of Saturated Hydrocarbons and in Free Aliphatic Radicals," V. V. Voyevodskiy, Inst of Chem Phys, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXIX, No 3, pp 455-458

Empirical formulas are developed for Q_{CH} and Q_{CC}. The use of the formulas on hydrocarbon mols and radicals is demonstrated on examples. It can serve for explaining the kinetics of complex transformations of hydrocarbons.

211T20

2

Reactivity of free alkyl radicals. *N. N. Tikhomirova and V. V. Voevodskii* (Moscow State Univ.). *Doklady Akad. Nauk S.S.S.R.* 79, 983-6(1951).—On the assumption (Bolland, *C.A.* 44, 9783i; Steiner and Watson, *C.A.* 43, 5270c) that the rate of free-radical exchange reactions of the type $R_1\cdot + R_2R_3 \rightarrow R_1R_2 + R_3\cdot$ is detd. primarily by the activation energy *E*, and on the basis of data of *E* (Trotman-Dickenson and Steacie, *J. Chem. Phys.* 19, 329(1951); *C.A.* 44, 8851h) for the series $\cdot CH_3$ + (C_2H_6; Me_4C; Me_3CCMe_3; C_5H_{12}; C_6H_{14}; C_7H_{16}; iso-C_8H_{18}; $Me_2CHCHMe_2$; $Me_2CHCHMeCHMe_2$) → CH_4 + (Et·; $Me_3CCH_2\cdot$; $Me_3CCMe_2CH_2\cdot$; $Et\dot{C}HMe$; $Et_2\dot{C}H$; $Pr\dot{C}HEt$; $Me_3\dot{C}$; $Me_2CH\dot{C}Me_2$; $Me_2HC\dot{C}MeCHMe_2$ or $Me_2CHCHMe\dot{C}Me_2$) (E = 10.4 ± 0.2, 10.0, 9.5, 8.3, 8.1, 8.1, 7.6, 6.9-7.5, 7.9), it can be concluded that the reactivity increases with increasing complexity of the mol. R_2R_3; the same applies to the rates of reactions between H atoms and aliphatic hydrocarbons. The reverse order is found for reactions between one given mol. and different radicals. These facts suggest the general rule that the greater the reactivity of the reactants, the less active are the products, or, in other words, that the more favorable the reaction thermodynamically, the greater is its velocity. This formulation is analogous to Evans and Polanyi's (*C.A.* 32, 2813⁴) linear relation $E = A - \alpha\Delta H$ between the activation energy *E* and the heat ΔH of reactions between alkali metals and alkyl halides. For the above free-radical exchange reactions, this relation could be tested with the aid of V.'s method of estn. of bond energies (cf. preceding abstr.) which gives ΔH with an accuracy of 1-2 kcal./mole. For the forward reaction, *E* proves actually to decrease, and for the back reaction to increase linearly with increasing ΔH. From these plots, A = 11.5 kcal./mole; this corresponds to the activation energy of the exchange $\cdot CH_3 + CH_4 \rightarrow CH_4 + \cdot CH_3$, which could not be detd. directly. The activation energies of $\cdot CH_3 + (CH_3)_4C \rightarrow CH_4 + (CH_3)_3C\text{-}CH_2\cdot$ and $\cdot CH_3 + C_2H_6 \rightarrow CH_4 + \cdot C_2H_5$ are approx. equal, as their ΔH is approx. equal. Activation energies *E* (and ΔH, in parentheses) for a series of radical exchange reactions $R_1\cdot + R_2H \rightarrow R_1H + R_2\cdot$ are calcd. and tabulated:

	$CH_3\cdot$	$MeCH_2\cdot$	$EtCH_2\cdot$
MeH	11.5 (0)	15.0 (−5)	16.5 (−7)
EtH	10.0 (+5)	14.8 (0)	16.2 (−2)
PrH	9.5 (+7)	14.2 (+2)	15.5 (0)
BuH	9.3 (+8)	13.9 (+3)	15.2 (+1)
Me_2CHH	8.7 (+10)	13.3 (+5)	14.5 (+3)
EtMeCHH	8.2 (+12)	12.7 (+7)	14.1 (+4)
Me_3CH	7.7 (+15)	11.6 (+10)	13.4 (+8)

The factors α are const. within each series; α = 0.73 for the endothermal reactions ($\Delta H > 0$) and α = 0.27 for exothermal reactions ($\Delta H < 0$). This constancy of α rests on the singleness of type of reaction; all these reactions involve passage of a H atom from one C atom to another. On the other hand, α is different in the series $H + RH \rightarrow H_2 + R$, where the H atom passes from C to the H atom. Thus, α is characteristic of the type of the elementary act, whereas *A* is characteristic of the given series. N. Thon

USSR/Chemistry - Isotopes, Hydrocarbons Nov 51

"Mechanism of the Exchange Reaction of Hydrocarbon Radicals With Molecular Deuterium," V. V. Voyevodskiy, G. K. Lavrovskiy, R. Ye. Mardaleyshvili, Inst Chem Phys, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXXI, No 2, pp 215-218.

Assumes that high deg and speed of introduction of D atoms, particularly into CH_3 radical, are due to participation of D_2 in addn to that of the few D atoms in the reaction. Investigated interaction of C_2H_5 radicals with D_2 in the absence of

199T6

USSR/Chemistry - Isotopes, Hydrocarbons Nov 51
(Contd)

D atoms. Found there was substitution in CH_2 groups of ethyl: n-butane substituted in the CH_2 groups could be isolated.

199T6

VOYEVODSKIY, V. V.

BUBEN, N. YA., VOYEVODSKIY, V. V., SOKOLOV, N. D.

Kondrat'yev, Victor Nikolayevich, 1900-

Scientific activities of V. N. Kondrat'yev. Usp. khim. 21 no. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 195~~3~~2 Uncl.

1. KONDRAT'YEV, V. N.; VOEVODSKIY, V. V.

2. USSR (600)

4. Chemical Reaction - Mechanism

7. "Theory of chain reactions," Usp. khim., 21, No. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

VOIEVODSKII, V. V.; KOMPANEYETS, A. S.

Nuclear Fission

Chain reactions in computing diffusion of two active centers. Zhur. eksp. i teor. fiz. 23 No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. UNCLASSIFIED.

VOYEVODSKIY, V. V.

USSR/Chemistry - Catalysts Aug 52

"The Recombination of Hydrogen Atoms on Solid Surfaces," G. K. Lavrovskaya and V. V. Voyevodskiy, Inst of Chem Phys, Acad Sci USSR

Zhur Fiz Khim, Vol 26, No 3, pp 1164-1166

A study was made of the recombination of H atoms on MoO_3, aluminosilicate catalyst, and activated carbon. The probabilities of recombination on these catalysts were detd and found to be related in the ratio 50:5:1. The correctness of the mechanism postulated for the recombination of the atoms was confirmed. The principal phase of the mechanism is the interaction of atoms adsorbed on the surface with atoms approaching the surface.

263T11

USSR/Chemistry - Coal-Tar Products Aug 52

"Binary Systems of Binuclear Molecules With the Participation of Indole," V. M. Kravchenko and I. S. Pastukhova, Donets Industrial Inst im N. S. Krushchev

Zhur Fiz Khim, Vol 26, No 8, pp 1191-1197

The indole-indene, indole-naphthalene, indole-isoquinoline, and indole-benzene systems were investigated because of the occurrance of their components in significant amounts in coal tar and crude coal-tar products.

263T12

21 Oct

VOYEVODSKIY, V. V.

USSR/Chemistry - Synthetic Fibers

"The Kinetics and Heat Effect in the Polymerization Reaction of Caprolactam ,"S.M. Skuratov, A.A. Strepikheyev, V.V. Voyevodskiy, Ye. N. Kanarskaya, Moscow State U imeni M. V. Lomonosov

"Dok Ak Nauk SSSR" Vol 86, No 6, pp 1155-1158

The polymerization reaction of caprolactam was carried out in a specially made calorimeter and the kinetic and heat effect of the reaction studied. A formula is derived for the rate of the reaction at any point in the temp range of 200-240°. Presented by Acad N. N. Semenov 27 Aug 52.

PA 234T35

VOYEVODSKIY, V.V.; KOMPANEYETS, A.S.

On N.S. Akulov's article; "Theory of chain reaction in the calculation of diffusion of active centers." Zhur.eksp.i teor. fiz. 25 no.3:379-380 S '53. (MLRA 7:10)
(Chemical reactions) (Akulov, N.S.)